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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,255	02/14/2001	Stephen H. Gunther	42390P4728X	6135

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EXAMINER

LAU, TUNG S

ART UNIT PAPER NUMBER

2863

DATE MAILED: 11/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/784,255

Applicant(s)

GUNTHER ET AL.

Examiner

Tung S Lau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 31-63 is/are pending in the application.
- 4a) Of the above claim(s) 41-48 and 50-63 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 34-36 is/are allowed.
- 6) ☒ Claim(s) 1,6-9,14,16,17,22,24-27,31,32,37-40 and 49 is/are rejected.
- 7) ☒ Claim(s) 2-5,10-13,15,18-21,23 and 33 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

Election/Restrictions

1. Claims 41-48, 50-63 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention as noted in paper number 9.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

a. Claims 1, 6-9, 14, 16, 17, 22, 24, 37-40 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hussain et al. (U.S. Patent 6,172,611) in view of Gose et al. (U.S. Patent 5,675,297).

Hussain discloses a thermal management system, method and apparatus for an integrated circuit die including a temperature detection element formed directly on the integrated circuit die (col. 2, lines 40-60), the temperature detection element including at least one temperature sensor having an output (col. 4, lines 7-18); element to reduce power consumption of the integrated circuit die in response to the output of the at least one temperature sensor (col. 1, lines 10-

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56); a control element formed directly on the integrated circuit die (col. 4, lines 7-18), the control element including at least one register to provide an enable/disable bit for the thermal management system col. 5-6, lines 65-31); and a visibility element formed directly on the integrated circuit die, the visibility element to indicate a status of the output of the at least one temperature sensor (col. 5, lines 6-28); a die having a plurality of functional units formed thereon (col. 1-2, lines 57-9); internal clock circuitry formed on the die and coupled to at least one of the plurality of functional units (col. 2, lines 10-23); enable/disable bit for the thermal management system (col. 3, lines 48-67, col. 8, lines 5, lines 21), a microprocessor with memory coupled to a bus (col. 3, lines 48-67, col. 5, lines 28-40), using a trip point detection vs. time (fig. 4, 5 col. 7, lines 42-60), software control register to control the thermo unit (col. 2-3, lines 41-16), use of an external events to control thermo condition (col. 5, lines 6-28), slow down or throttle back the speed of the system (col. 4-5, lines 63-5), lowering supply power (col. 10-11, lines 54-2), software running condition with clock pulses (col. 2, lines 41-59), use of an interrupt signal (col. 5, lines 41-58).

Hussain does not disclose the use of pulse width modulation technique. Gose disclose the use of pulse width modulation technique (col. 2, lines 5-30), to provide a short circuitry protection, current limiting and reduce die size as a result of a conditional masking of the thermal shutdown protection circuitry (col. 2, lines 41-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hussain to have the use of pulse width modulation technique taught by Gose in order to provide a short circuitry protection, current limiting and reduce die size of the IC (col. 2, lines 41-47).

b. Claims 25-27, 32, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hussain et al. (U.S. Patent 6,172,611) in view of Gose et al. (U.S. Patent 5,675,297) and further in view of Boomer (U.S. Patent 5,256,914).

The Hussain and Gose combination disclose a method including the subject matter discussed above except the use of time interval to reduce power consumption of the system, clock signal substantially equal to the last duty cycle of trip temperature, Boomer discloses the use of time interval to reduce power consumption of the system (Col. 2, Lines 6-34, Col. 7, Lines 14-30), clock signal substantially equal to the last duty cycle of trip temperature (Col. 2, Lines 15-34) in order to prevent damage to the IC with fast response and fast return of the circuit to normal operation (Col. 2, Lines 30-34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hussain and Gose to have the use of time interval to reduce power consumption of the system, clock signal substantially equal to

the last duty cycle of trip temperature taught by Boomer in order to prevent damage to the IC with fast response and fast return of the circuit to normal operation (Col. 2, Lines 30-34).

Claim Objections

3. Claims 2-5, 10-13, 15, 18-21, 23, 33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitation of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance: prior art fail to teach a programmable voltage source providing a programmable voltage proportional to a temperature of the integrated circuit die; a comparator having one input coupled via a first signal line to the reference voltage source and another input coupled via a second signal line to the programmable voltage source, the comparator to provide a signal at the output of the at least one temperature sensor in response to the programmable voltage substantially equaling the reference voltage; A counter to count the lost clock cycles.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Allowable Subject Matter

4. Claims 34-36 are allowed.

Reasons for Allowance

5. The following is an examiner's statement of reasons for allowance:

Independent claim 34 contains allowable subject matter. None of the prior art of record shows or fairly suggests the claimed invention.

Regarding claim 34:

The primary reason for the allowance of claim 37 is the inclusion an apparatus with a register providing a sticky bit and counter to count a number of lost clock cycles. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Claims 35-36 are allowed due to their dependency on claim 34.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 703-305-3309.

The examiner can normally be reached on M-F 9-5:30.

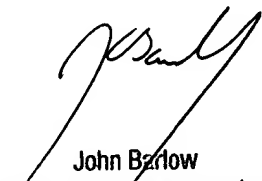
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5841 for regular communications and 703-308-5841 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TC2800 RightFAX Telephone Numbers : TC2800 Official Before-Final RightFAX - (703) 872-9318, TC2800 Official After-Final RightFAX - (703) 872-9319

TC2800 Customer Service RightFAX - (703) 872-9317

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